

CLAIMS

1. A method of producing a gluten substitute gum, said method comprising heating a mixture comprising a starch, an edible fat, an edible protein and a liquid for a time and under conditions sufficient to form an aerated mass.
- 5 2. The method of claim 1, wherein the starch is present in an amount of between about 20 and 80% by weight of said mixture.
3. The method of claim 1, wherein the starch is present in an amount of between about 30 and 70% by weight of said mixture.
4. The method of claim 1, wherein the starch is present in an amount of between
10 about 40 and 60% by weight of said mixture.
5. The method of claim 1, wherein the starch has less than 20 parts per million of gluten.
6. The method of claim 1, wherein the starch is selected from the group consisting of potato starch, sweet potato starch, white rice starch, glutinous rice starch, maize starch,
15 Codex Alimentarius wheat starch, sorghum starch, cassava starch, arrowroot starch and tapioca starch.
7. The method of claim 6, wherein the starch is selected from the group consisting of tapioca starch, arrowroot starch and maize starch.
8. The method of claim 7, wherein the starch is tapioca starch.
- 20 9. The method of claim 1, wherein the fat is derived from an animal source or a plant source.
10. The method of claim 9, wherein the fat is selected from the group consisting of canola oil, corn oil, grapeseed oil, soybean oil, sunflower seed oil, safflower oil, rapeseed oil, cottonseed oil, sesame oil, olive oil, palm oil, coconut oil, fish oil, copha, margarine,
25 butter, milk fat, chicken fat, lard and tallow, which may have been partially or completely hydrogenated or otherwise modified, non-toxic fatty materials having properties similar to triglycerides and any combination of the foregoing fats.

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11. The method of claim 1, wherein the fat is present in an amount of between about 1 and 10% by weight of said mixture.

12. The method of claim 1, wherein the fat is present in an amount of between about 1 and 6% by weight of said mixture.

5 13. The method of claim 1, wherein the fat is present in an amount of between about 1 and 4% by weight of said mixture.

14. The method of claim 1, wherein the fat to starch ratio in said mixture is less than about 15:100.

10 15. The method of claim 1, wherein the fat to starch ratio in said mixture is less than about 12:100.

16. The method of claim 1, wherein the fat to starch ratio in said mixture is less than 10:100.

17. The method of claim 1, wherein the protein is derived from an animal source or a plant source.

15 18. The method of claim 17, wherein the protein is derived from a source selected from the group consisting of meat, poultry, eggs, milk, cheese, bean flour, rice flour, nuts and any combination thereof.

19. The method of claim 18, wherein the protein is selected from the group consisting of gelatine, whey, egg white, soybean protein and rice protein.

20 20. The method of claim 1, wherein the protein is present in an amount of between about 2 and 20% by weight of said mixture.

21. The method of claim 1, wherein the protein is present in an amount of between about 2 and 12% by weight of said mixture.

25 22. The method of claim 1, wherein the protein is present in an amount of between about 2 and 8% by weight of said mixture.

23. The method of claim 1, wherein the protein to starch ratio in said mixture is less

than about 30:100.

24. The method of claim 1, wherein the protein to starch ratio in said mixture is less than about 25:100.

25. The method of claim 1, wherein the protein to starch ratio in said mixture is less
5 than 20:100.

26. The method of claim 1, wherein the protein to fat ratio is about 3:1.

27. The method of claim 1, wherein the protein to fat ratio is about 2.5:1.

28. The method of claim 1, wherein the protein to fat ratio is about 2:1.

29. The method of claim 1, wherein the liquid is water.

10 30. The method of claim 29, wherein the water is present in an amount of between about 20 and 80% by weight of said mixture.

31. The method of claim 29, wherein the water is present in an amount of between about 30 and 70% by weight of said mixture.

15 32. The method of claim 29, wherein the water is present in an amount of between about 40 and 60% by weight of said mixture.

33. The method of claim 1, wherein the fat and the protein are obtained from or provided in the form of a foodstuff containing both the fat and the protein.

34. The method of claim 33, wherein the foodstuff is selected from milk, egg and vegetable products.

20 35. The method of claim 33, wherein the foodstuff is a gluten-free flour.

36. The method of claim 35, wherein the flour is selected from the group consisting of buckwheat flour, sorghum flour, maize flour, white rice flour and soybean flour.

37. The method of claim 35, wherein the flour is soybean flour.

38. The method of claim 1, wherein the mixture is heated to a temperature of

between about 110 and 150 °C.

39. The method of claim 1, wherein the mixture is heated to a temperature of between about 120 and about 140 °C.

40. The method of claim 1, wherein the mixture is heated to a temperature of
5 between about 125 and 135 °C.

41. The method of claim 1, wherein the mixture is heated to a temperature of between about 130 and 133 °C.

42. The method of claim 1, wherein heating is effected by microwave energy.

43. The method of claim 1, wherein heating is effected by extrusion.

10 44. The method of claim 1, further comprising drying the aerated mass to form a dry aerated mass.

45. The method of claim 44, further comprising grinding or crushing the dry aerated mass to form a ground or powder.

46. A gluten substitute gum produced by the method of claim 1.

15 47. A plurality of ingredients in mix or in kit form for producing a gluten substitute gum, said ingredients comprising a starch, an edible fat and an edible protein which are present in relative amounts sufficient to form an aerated mass upon mixing with a predetermined amount of liquid and heating the mixture so formed at an aerated mass-forming effective temperature.

20 48. The ingredients of claim 47, wherein the fat is present in an amount between about 0.5 and 5% by weight of the ingredients in said mix or kit.

49. The ingredients of claim 47, wherein the fat is present in an amount between about 0.5 and 3% by weight of the ingredients in said mix or kit.

25 50. The ingredients of claim 47, wherein the fat is present in an amount between about 0.5 and 2% by weight of the ingredients in said mix or kit.

51. The ingredients of claim 47, wherein the fat to starch ratio in said mix or kit is less than about 15:100.

52. The ingredients of claim 47, wherein the fat to starch ratio in said mix or kit is less than about 12:100.

5 53. The ingredients of claim 47, wherein the fat to starch ratio in said mix or kit is less than 10:100.

54. The ingredients of claim 47, wherein the protein is present in an amount of between about 1 and 10% by weight of said the ingredients in said mix or kit.

55. The ingredients of claim 47, wherein the protein is present in an amount of
10 between about 1 and 6% by weight of said the ingredients in said mix or kit.

56. The ingredients of claim 47, wherein the protein is present in an amount of between about 1 and 4% by weight of said the ingredients in said mix or kit.

57. The ingredients of claim 47, wherein the protein to starch ratio in said mix or kit is less than about 30:100.

15 58. The ingredients of claim 47, wherein the protein to starch ratio in said mix or kit is less than about 25:100.

59. The ingredients of claim 47, wherein the protein to starch ratio in said mix or kit is less than 20:100.

60. The ingredients of claim 47, wherein the protein to fat ratio in said mix or kit is
20 about 3:1.

61. The ingredients of claim 47, wherein the protein to fat ratio in said mix or kit is about 2.5:1.

62. The ingredients of claim 47, wherein the protein to fat ratio in said mix or kit is about 2:1.

25 63. Use of a starch, an edible fat and an edible protein in the preparation of a mix or kit for the production of a gluten substitute gum.

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64. A mix for the preparation of bakery products, said mix comprising the gluten substitute gum of claim 46 together with a gluten-free starch in relative amounts sufficient to form a coherent dough system upon the addition of a liquid, and to retain leavening gas during the preparation of said dough, wherein said products are producible in the substantial absence of wheat flour.

65. Use of the gluten substitute gum of claim 46 in the preparation of a mix for producing foodstuffs including bakery products.

66. A method for producing bakery products, said method comprising mixing the gluten substitute gum of claim 46 together with a gluten-free starch and water to form a dough and heating the dough for a time and at a temperature sufficient to produce said bakery products.

67. A food product produced using the gluten substitute gum of claim 46.